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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/675,529	09/30/2003	Jerrell Hein	026-0036	6093

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ZAGORIN O'BRIEN GRAHAM LLP
7600B NORTH CAPITAL OF TEXAS HIGHWAY
SUITE 350
AUSTIN, TX 78731

EXAMINER

FRANKLIN, RICHARD B

ART UNIT	PAPER NUMBER
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2181

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/29/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/675,529	HEIN, JERRELL	
	Examiner	Art Unit	
	Richard Franklin	2181	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 13-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 13-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1 – 11 and 13 – 23 are pending.

Response to Arguments

2. Applicant's arguments, see pages 8 – 9, filed 31 October 2006, with respect to the rejection(s) of claim(s) 1 under 35 USC 102(b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of newly found prior art reference(s).

Claim Objections

3. Claim 23 is objected to because of the following informalities:
 - Claim 23 depends from claim 12, which has been canceled. The subject matter of canceled claim 12 has been added to claim 11. Therefore, the Examiner has treated claim 23 as depending from claim 11.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 – 9, 11, and 13 – 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,451,912 (hereinafter Torode) in view of US Patent No. 6,882,214 (hereinafter Spenca).

As per claims 1 and 19, Torode teaches an apparatus comprising an Output Disable (OD) terminal (Torode; Figures 1 – 2) wherein the OD terminal has two modes of operation. In the first mode, the terminal is used as a programming terminal that accepts serial data that determines the operation of the apparatus (Torode; Col 4 Lines 15 – 19). In the second mode, the terminal is used as an output enable terminal that enables output from the apparatus determining on the voltage on the terminal (Torode; Col 3 Lines 25 – 31).

Torode does not teach wherein the mode change from the first mode to the second mode permanently disables the first mode.

However, Spenca teaches an IC trimming method that involves programming trimming data in the IC and then performing a locking step. The locking step disconnects a trimming block from the pins on the package and permanently disables the trimming block (Spenca; Col 1 Lines 14 – 19).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the teachings of Torode to include the permanent mode change because doing so allows for preservation of the programmed parameter values (Spenca; Col 1 Lines 14 – 19).

As per claim 2, Spenca also teaches wherein once the terminal is converted to the second mode of operation, the first mode of operation for the terminal is permanently disabled (Spenca; Col 1 Lines 14 – 19).

As per claims 3, 13, and 20, Torode also teaches wherein a terminal configuration determining the mode of operation of the terminal is stored in a non-volatile memory (Torode; Figure 7 Item 740, Col 6 Lines 56 – 60).

As per claims 4, 14, and 21, Torode also teaches wherein the control circuit is responsive to a communication received over the terminal to convert the terminal to the second mode of operation (Col 4 Lines 15 – 19).

As per claims 5 and 15, Torode also teaches wherein the serial communication received over the terminal in the first mode includes a command and write data (Torode; Figure 9, Col 7 Lines 10 – 13).

As per claims 6 and 16, Torode also teaches wherein the control logic distinguishes between a calibration clock and a serial communication received on the terminal (Torode; Col 8 Lines 11 – 13).

As per claims 7 and 17, Torode also teaches wherein the output enable function is for controlling the output of one or more clocks according to the voltage value of the terminal (Torode; Col 3 Lines 26 – 31).

As per claim 8, Torode also teaches wherein a controllable oscillator is coupled to receive a reference frequency and to supply a clock signal that is coupled to an output terminal that is controlled by the output enable terminal (Torode; Col 5 Lines 23 – 33); and a resonating device coupled to supply the reference frequency (Torode; Figures 2 – 4 Item 220).

As per claim 9, Torode also teaches wherein the terminal is on a package (Torode; Figure 1 Item 100, Col 2 Line 64 – Col 3 Line 25), the package including an integrated circuit (Torode; Figure 2 Item 210) and a resonating device (Torode; Figures 2 – 4 Item 220), the integrated circuit including the controllable oscillator (Torode; Figure 5 Item 560), and the resonating device being a crystal device (Torode; Figures 2 – 4 Item 220, Col 3 Lines 38 – 51).

Art Unit: 2181

As per claim 11, Torode teaches an apparatus comprising an Output Disable (OD) terminal (Torode; Figures 1 – 2) wherein the OD terminal has two modes of operation. In the first mode, the terminal is used as a programming terminal that accepts serial data that determines the operation of the apparatus (Torode; Col 4 Lines 15 – 19). In the second mode, the terminal is used as an output enable terminal that enables output from the apparatus determining on the voltage on the terminal (Torode; Col 3 Lines 25 – 31).

Torode does not teach wherein the mode change from the first mode to the second mode permanently disables the first mode.

However, Spenca teaches an IC trimming method that involves programming trimming data in the IC and then performing a locking step. The locking step disconnects a trimming block from the pins on the package and permanently disables the trimming block (Spenca; Col 1 Lines 14 – 19).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the teachings of Torode to include the permanent mode change because doing so allows for preservation of the programmed parameter values (Spenca; Col 1 Lines 14 – 19).

As per claim 18, Torode also teaches wherein the terminal is on a package, the package including an integrated circuit and a resonating device, the resonating device being one of a crystal device (Torode; Figure 1 Item 100).

As per claims 22 and 23, Spenca also teaches that converting from the first mode to the second mode is a part of a locking function (Spenca; Col 1 Lines 14 – 19). The locking function includes permanently disabling the first mode of operation (Spenca; Col 1 Lines 14 – 19) and therefore teaches that the second mode of operation is not accessible without permanently disabling the first mode of operation.

5. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,451,912 (hereinafter Torode) in view of US Patent No. 6,882,214 (hereinafter Spenca) and further in view of US Patent No. 6,670,852 (hereinafter Hauck).

As per claim 10, Torode in combination with Spenca teaches the apparatus as described per claim 1 (See rejection of claim 1 above). Torode also teaches wherein a terminal receives serial communications and a calibration clock (Torode; Col 8 Lines 17 – 20).

Torode in combination with Spenca does not teach wherein the apparatus comprises a second terminal that functions as a dedicated programmable input/output terminal.

However, Hauck teaches a programmable crystal oscillator with a dedicated programming input terminal (Hauck; Figure 2 Item 120) that does not get converted into an output enable terminal.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the teachings of Torode in combination

Art Unit: 2181

with Spenca to include the dedicated programming terminal because it allows for in-system tuning of the crystal oscillator by the user (Hauck; Col 6 Lines 15 – 16).


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Franklin whose telephone number is (571) 272-0669. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Sparks can be reached on (571) 272-4201. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Richard Franklin
Patent Examiner
Art Unit 2181


DONALD SPARKS
SUPERVISORY PATENT EXAMINER